

A COMPENDIUM OF AIDS TO FIRST AID

By N. CORBET FLETCHER



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A COMPENDIUM OF AIDS TO FIRST AID

BY

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*Surgeon Lecturer to the Broad St. Division of the
L. & N. W. Railway Ambulance Centre*

WITH AN INTRODUCTION

BY

JAMES CANTLIE

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Hon. Colonel R.A.M.C. (T.), 1st London Division

Knight of Grace Order of St. John of Jerusalem

*Honorary Life Member of, and Lecturer and Examiner in,
the St. John Ambulance Association*

“Know then thyself, presume not God to scan,
The proper study of mankind is man.”

—Pope.

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DEDICATED

TO

JAMES CANTLIE, Esq., M.A., M.B., F.R.C.S.

AS AN APPRECIATION OF HIS SPLENDID MANUALS OF FIRST AID, ON WHICH

THIS COMPENDIUM IS FOUNDED

AND

I. T. WILLIAMS, Esq.

Assistant General Manager, L. & N. W. Railway

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PREFACE.

ENCOURAGED by the recent successes of our representative teams, and in response to frequent requests, I have collected my "Aids to Memory" and arranged them under the title of "Aids to First Aid." In doing this I recall the many pleasant hours spent with the Broad St. Ambulance Class, for whose benefit these "Tips" were prepared. The value of such "Aids" is, I know, a debatable point; but, when they are based on a sound knowledge of the textbook, they are apt to prove their usefulness in a sudden emergency and in the crisis of an examination. Lastly, I desire to record my appreciation of the great assistance which I have received from District Secretary, Mr. E. T. Milburn, L. N. W. Railway.

October, 1912,

N. C. F.

128, Haverstock Hill, N. W.

INTRODUCTION.

ALL students of First Aid, especially those working for competitions, will welcome Dr. Fletcher's "Aids to Memory." As he carefully explains, the tabulated knowledge he presents is not intended to supplant the study of text-books, but to concentrate that knowledge in a form that may readily be turned to account, either for practical application in times of accident or in ambulance competitions.

Dr. Fletcher's "Aids" are given in a form which will commend itself, and show resource and ability in the methods he adopts. It is only to those who have thoroughly mastered the principles of First Aid that this form of knowledge can be of any use; so that there is no danger of anyone using the "Aids" as a rapid means of acquiring knowledge only to forget it; but to those who know their work, Dr. Fletcher's "Aids to First Aid" will prove invaluable.

JAMES CANTLIE.

December, 1912.

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A
COMPENDIUM OF AIDS
TO
FIRST AID.

FIRST AID.

FIRST AID is the rendering of *immediate, temporary* and *efficient* assistance in Accidents and Sudden Illness. It depends on three factors—*Knowledge, Common Sense* and *Skill*; and the official Textbook is its **Charter**.

Tip—AID.

Utility of First Aid.— { **A** Arterial hæmorrhage.
It is especially useful in { **I** Injuries--especially severe fractures.
 { **D** Drowning.

ITS PRINCIPAL OBJECTS are to (Note four **Pr's.**)
1. *Preserve Life*—by controlling and arresting hæmorrhage.
2. *Prevent aggravation* of injuries, especially wounds and fractures.
3. *Provide relief* for inevitable pain.
4. *Protect against* unnecessary suffering, rough handling, transport, &c.

DEFINITIONS.

A Sign is something “*seen*” or found by you during examination.
A Symptom is what “*seems*” to the patient to be present or to occur.
History is the patient’s account of what happened, and what he believes was the cause of his accident or illness—viz., **His Story**.

THE PRINCIPLES OF FIRST AID.

Tip—To render efficient Aid, you must be **RED HOT** on your **CHARTER**.

- | | |
|---|--|
| 1. KNOWLEDGE
(the gift of Study)
makes a man | R Resourceful in preventing further damage, and in helping Nature's efforts at repair.
E Explicit in giving clear instructions to bystanders, in using their services to advantage.
D Discriminating in deciding upon and in treating the most serious injury first. |
| 2. COMMON SENSE
(the gift of Nature)
makes a man | H Heedful of the patient's comfort, and in the prevention of unnecessary pain, <i>e.g.</i> , in handling, transport, &c.
O Observant in noting the Causes and Signs of injury.
T Tactful in eliciting the History and Symptoms . |
| | Remove the C Cause of injury, or <i>remove from Cause</i> . |
| | Treat the H Hæmorrhage first, when severe; and to cover up promptly a bleeding wound. |
| | Provide fresh A Air freely; to place in position of easy breathing, and to perform Artificial Respiration . |
| 3. SKILL
(the gift of Experience)
teaches a man to | Procure R Rest for an injured part by a restful position of body, and by supporting part. |
| | Keep up the T Temperature of the body, which is apt to fall after injury and shock. |
| | Decide if an E Emetic should be given in poisoning, and select the most suitable. |
| | Arrange the R Removal of the necessary <i>clothes</i> skilfully and the best means of Removal of the patient . |

SIGNS AND SYMPTOMS OF FRACTURE AND DISLOCATION.

FRACTURE OF BONE.	DISLOCATION OF JOINT.
Tip—DISSPIGM. D Deformity of Limb <i>at</i> fracture, due to contraction of muscles, overlapping of ends, weight of limb, &c. I Inability to move limb: pain. S Shortening—due to contraction of muscles and overlapping of ends of bone. S Swelling <i>at</i> fracture, due to overlapping of ends, blood, &c. P Pain <i>at</i> fracture, severe, sharp, especially on moving. I Irregularity of bone <i>at</i> fracture. G Grating of Bones—Present. M Mobility—An unnatural mobility of bones present.	Tip—DINSPIGM. D Deformity of Limb <i>near</i> joint, due to displacement of bones which form joint. I Inability to move joint; fixation. N Numbness at and below the joint, and pins-and-needles sensations, due to pressure on nerves by dislocated bone. S Swelling <i>near</i> joint, due to unusual position of displaced bone. P Pain <i>near</i> joint, severe, sickening, persistent. I Irregularity <i>near</i> joint. G Grating of Bones—Absent, unless complicated by fracture. M Mobility—The natural mobility of joint is absent.

SPECIAL NOTES.

1. The last two, Mobility and Crepitus, must not be sought, but may present themselves during examination.
2. The Signs of Fracture are best seen in fractures of the long bones.
3. Fractures at or near joints are "complicated," because the swelling (which quickly follows) prevents accurate diagnosis, and both injuries may be present together—viz., *Fracture-Dislocation*.
4. Dislocation, most common—Shoulder, Thumb and Fingers.
5. Fracture, most common—Radius and Clavicle.
6. Sprain, most common—Thumb, Ankle, Wrist. This is a "missed" dislocation, and is a stretching of the ligaments of a joint—due to injury—without separation of the bones.
7. Fractures of Limbs require Splints *and* Bandages; Fractures of Ribs, Jaw, Clavicle, Scapula, require bandages only; Fractures of Skull, Spine and Pelvis are usually "*complicated*," but require no special apparatus (see p. 38).

BONES.

Note how the **numbers 5, 7 and their multiples** predominate.

Trunk—24 vertebræ—Cervical, 7; Dorsal (Rib), 12; Lumbar, 5.
N.B.— $12 = 7 + 5$; and $12 + 12 = 24$.

Pelvis—4 bones—2 Ilia (Haunch), Sacrum (Rump), Coccyx (Tail).

Ribs—24 bones—12 pairs: Upper 7 (True Ribs), attached to Sternum, lower 5 (False). All attached posteriorly to Dorsal vertebræ.

Arm—5 bones—Clavicle, Scapula, Humerus, Radius, Ulna.

& **Hand**—Carpal 8 (two rows); Metacarpal, 5; Phalanges, 14.

Leg—5 bones—Ilium, Femur, Tibia, Fibula, Patella.

& **Foot**—Tarsal, 7 (two arches); Metatarsal, 5; Phalanges, 14.

SUMMARY OF SPECIAL FRACTURES.

Site	Violence (Usual)	Variety	Leading Signs	Special Notes
Vault ..	Direct	Compound	(1) Swelling. Irregularity. (2) Insensibility — if immediate, Concussion; if delayed, Compression.	All head injuries serious. Treat as Concussion, and remove recumbent (shutter).
Base ..	Indirect	Complicated	(1) Insensibility — immediate. (2) Hæmorrhage — and serum, from Nose, Orbit, Stomach (swallowed), Ear .	Tip = N. O. S. E. Remove recumbent.
Jaw ..	Direct	Compound	(1) Pain — (irregularity teeth). (2) Inability move jaw without pain. (3) Hæmorrhage — mouth, gums.	Liable sepsis. Keep mouth clean. Stop talking. Support and fix fracture.
Spine ..	Direct Indirect	Complicated	(1) Pain — at and loss of sensation below fracture. (2) Inability move legs (and arms, if fracture high).	Treat shock. Support head. Remove recumbent (shutter). Unload when doctor comes.
Pelvis ..	Direct	Simple Complicated	(1) Pain — cannot stand. (2) Inability move legs without pain. (3) Hæmorrhage — Internal or combined.	Exclude injury to legs. <i>Treat as spine.</i> If bladder injured, urine bloody.

Site	Violence (Usual)	Variety	Leading Signs	Special Notes
Ribs (6, 7, 8, 9)	Direct Indi- rect Mus- cular	Simple Compli- cated	(1) Pain —especially on breathing, coughing. (2) Inability move ribs without pain. (3) Hæmorrhage —In- ternal or combined.	Tip = D. I. O. D irect violence drives broken ends In ; I ndirect O ut. <i>Note.</i> —Midribs and at midpoint.
Sternum	Direct Indi- rect Mus- cular	Simple Compli- cated	(1) Pain —especially on breathing, coughing. (2) Inability move ribs without pain. (3) Hæmorrhage —In- ternal or combined.	See Ribs—Loosen clothes. Study comfort. Prevent movements. If no doctor, treat as spine.
Clavicle	Indi- rect	Simple	(1) Pain —(Irregularity felt). (2) Inability move arm. (3) Supports elbow and turns head towards injury.	Liable become Com- pound and Com- plicated. Great care.
Scapula	Direct	Simple	(1) Pain —(Irregularity felt). (2) Inability move arm. (3) Supports elbow and turns head towards injury.	Patient carries head as if in- specting injury. See Clavicle. Often with severe chest injuries.
Patella	Mus- cular Direct	Simple	(1) Pain —(Irregularity felt). (2) Inability move leg (lift). (3) Supports knee (swelling).	Prevent attempts to stand or bend knee. Keep leg extended and pre- serve capsule of patella.

Note similarity of signs—*Ribs, *Sternum (and Pelvis, Jaw),
and *Clavicle, *Scapula (and Patella).

GENERAL RULES IN TREATMENT OF FRACTURES.

Tip—FRACTURES.

- F** **Fix** fracture on spot. Before *any* movement **Fix Fracture First**.
- R** **Restrain** all movements of patient *and* friends ; and keep fracture at **Rest**.
- A** **Apply** support ; if to leg, grasp it firmly above and below fracture, and
 Apply steady traction till leg **Appears** normal.
- C** **Control** hæmorrhage first, if fracture is **Compound**.
- T** **Traction** on lower fragment must be steadily maintained—till splint and bandages hold fracture **Taut (not Tight)**.
- U** **Uncover** if fracture compound, or if hæmorrhage present.
- R** **Remove** patient carefully ; and, if spine, pelvis, lower limb broken—**Recumbent**.
- E** **Extreme care** and gentleness throughout **Essential**.
- S** **Shock**—always more or less present. Cover warmly and so—**Sustain** the Body Temperature.

SPECIAL NOTES.

1. *Essentials of Treatment* : (1) *Prevent* further damage, and (2) *Provide* proper transport for patient.
2. *When in doubt*, treat as fracture. Common errors—"Bruised" Hip, "Sprained" Wrist and Ankle.
3. If fracture protrudes, *first* treat as wound ; and do *not* apply traction.
4. *First* control the fracture, *then* control the splints.
5. Splints *must* control the joints above and below the fracture.
6. In fixing splints, apply *upper* bandage *first*.
7. *Never* apply a bandage over fracture *except* as dressing of wound.
8. When possible, utilize *Nature's Splints*—and bandage arm to trunk, and leg to leg,

WOUNDS.

DEFINITION.—A Wound is any division of soft parts, produced by external violence, and associated with more or less bleeding.

VARIETIES AND CAUSES.

Tip—CLIP.

- C Contused**—Parts bruised and crushed ; caused by blunt-edged tools. Bleeding slight ; difficult to cleanse ; liable sepsis ; often combined with—
- L Lacerated**—Edges torn and ragged ; caused by machinery (accidental amputation, &c.), animal bites, &c. Complications as above.
- I Incised**—Edges well defined, clean cut and gaping ; caused by sharp-edged tools, and sudden impact on subjacent bone. Bleeding severe ; heal quickly.
- P Punctured**—Small opening, edges driven in ; caused by sharp, pointed tools and insect bites. Bleeding severe ; deep internal injury ; sepsis.

DANGERS—Hæmorrhage and Poisoning, which may be either—

- (1) *Inevitable, i.e.*, introduced with injury—Septic (dirt, germs, &c.) and Special (mad dog, snake, insect bites) or
- (2) *Preventable, i.e.*, introduced subsequent to injury—Dirt, germs (Sepsis). For treatment see **Suffragists**, p. 14.

SPECIAL WOUNDS AND INJURIES.

WOUNDS OF ABDOMINAL WALLS—Always serious. **Protect, Prevent.**

If wound is vertical (and no protrusion of intestines) keep patient vertical (*i.e.*, flat, knees straight, &c.), *but for any other condition* (*e.g.*, transverse wounds, protrusion of intestines, hernia, &c.), **Protect by keeping semi-recumbent** (*i.e.*, head, shoulders raised, knees bent), and **Prevent** Protrusion (firm bandage), Sepsis (clean towel, warm sterile water), Shock (keep warm). Await doctor.

Note.—Cold applications, ice bag, for Hernia.

SPECIAL WOUNDS AND INJURIES.—*Continued.*

WOUNDS OF INTERNAL ORGANS.—For Causes see “**Stick**” (p. 13). For Treatment see “**Broad St. Special**” (p. 28) and apply hot fomentations locally.

Leading Signs—

1. **Pain** (if conscious) at region of organ.
2. **Collapse**, due to fright, injury and loss of blood.
3. **Hæmorrhage** (effects of) Internal and Combined.

Special Signs (and Common Causes)—

Lungs (Fracture of Ribs, Stabs)—Sputum frothy, blood (scarlet). Pain worse, cough, deep breath, &c. Signs of Hæmorrhage, Internal or Combined.

Stomach (Kicks, Tumbles, especially after full meal)—Vomit food, blood (dark, coffee grounds). Signs Internal Hæmorrhage and Collapse marked. Give nothing by mouth.

Liver, Spleen (Fracture of Ribs, Kicks)—Local swelling and Signs Internal Hæmorrhage marked. Marked pallor, feeble pulse, &c.

Kidneys (Fracture of Ribs, Kicks)—Local Swelling. Signs of Hæmorrhage, Internal or Combined. Urine bloody, deep red or like porter.

Bladder (Fracture of Pelvis, Crush, Kicks, especially when distended)—Urine scanty, blood tinged. Collapse marked. Signs Internal Hæmorrhage.

FISHHOOK BENEATH SKIN—Troublesome, painful. Push hook forward through skin; clip off dressing or barbed end; withdraw. Dress wound.

NEEDLE AND JOINT INJURIES—Serious. **Prevent, Protect.** Prevent interference. Protect with **Antiseptic** dressing; **Good** pad cotton wool, &c.; keep **Immobile**, and **Support** (sling or back splint). Doctor. (See “**Suffragists**,” p. 14.)

DRESS ON FIRE—**Prevent, Protect, Provide.** Flames rise up—

1. **Prevent** spread by placing flat (prone or supine), *flames uppermost*.
2. **Protect** by smothering flames (and covering woman assistant) with wet rug, &c.
3. **Provide** relief—remove clothes, treat shock, dress burns. (See **Burns**, p. 16.)

FOREIGN BODIES—

1. **Eye**—Leading Signs : **Pain, Redness, Swelling.**

General Treatment of ALL Cases.—Prevent rubbing and end treatment (provide relief) with two drops Castor Oil; also, if necessary, apply Good pad and bandage (prevent movements). Doctor. *NOTE that a correct position of the eyeball (upper lid, down; lower, up) greatly facilitates removal.*

(1) *If foreign body solid and loose* (dust, hair, &c.), and not apparent, probably under upper lid, but first explore lower lid. *Patient looks up.* Remove with fine brush, &c. Then explore upper lid. *Patient looks down.* Draw upper lid forward, rub with lower. Repeat, and if necessary stand behind patient, who sits facing light; place rod on upper lid, press back, rapidly evert, and remove with brush, wet handkerchief, &c.

(2) *If foreign body solid and embedded in Eye* (steel, &c.). Avoid interference. General Treatment only. (See above.)

(3) *If foreign body irritant* (liquid), *e.g.*, Acid (Vitriol) or Alkali (Ammonia, Lime). Neutralize with warm water or milk, and dilute alkali or acid solution, but first brush away lime, which will be slaked by water. General Treatment. Doctor.

2. **Ear**—If insect, fill ear with oil; otherwise prevent interference; *no immediate danger to ear (or nose) except from poking.* Children push peas and pebbles through small openings of ear and nose into cavities beyond.

3. **Nose**—Obstruct opposite nostril; blow nose; promote sneezing, pepper.

4. **Throat, Choking**—Symptoms often urgent. Open mouth; explore throat boldly with finger; dislodge, remove. If impossible, cause vomit or push onwards beyond air passages into gullet. Artificial Respiration *after removal* of foreign body, if breathing fails.

5. **Stomach**—Avoid interference; no emetic or aperient, especially if foreign body sharp edged. Best give stodgy food—suet, porridge, &c., which will delay digestion and catch up foreign body.

FUNCTIONS OF BLOOD.

Blood is the fluid medium in which nourishment and waste products are carried to and from all parts of the body, and through which the various vital functions of the body (*e.g.*, Respiration, Digestion, &c.) are performed.

These functions may be epitomized.

Tip—BLOOD.

B to regulate and to sustain the	Body-Temperature.
L to supply the body and tissues with	Liquid (—moisture).
O to absorb from the air and to carry	Oxygen to the tissues.
O to renew and to replace the	Output of nourishment.
D to carry out Nature's plans for the	Discharge of waste products.

HÆMORRHAGE.

Hæmorrhage signifies the escape of blood from the blood-vessels, and the effects (and the signs) are *the same, whether the bleeding is external or internal*. In all cases, the causes are Accident or Disease; and, as there are **Three Varieties** (Arterial, Venous, Capillary) so there are—

Three Forms of Hæmorrhage. (See p. 3.)

- (1) **External**—Blood always seen, usually due to Accident.
- (2) **Internal**—Blood not seen : Disease of or Accident to large blood vessels and internal organs of chest and abdomen ; *surface injury often insignificant* compared with the internal damage.
- (3) **Combined External and Internal**—Usually due to Disease of Nose, Lungs or Stomach ; *external loss often small* compared with internal. Signs Syncope marked. (See Wounds of Lung, &c., p. 10.)

The Signs and Symptoms of all Forms are the *same*—

- (1) Blood seen or not seen.
- (2) The effects of the loss of blood on the System and Brain—viz., Syncope, *the severity of which varies directly with rapidity of loss and amount of blood lost*. (See p. 42.)

Essentials of Treatment of Hæmorrhage—

- (1) *Position of Body and Part*—Prone position slows heart and general circulation ; elevation of part limits the *local* supply of blood.
- (2) *Pressure*—(i) on wound ; (ii) on pressure point (vessel of supply).
 - (1) **Immediate**—Fingers and Flexion ; (2) **Instrumental**—Pad and Bandage and Tourniquet.

The Causes of Internal Hæmorrhage—see p. 42.

(A) Disease of the Lungs, and Stomach (and Brain).

(B) Accidents—*e.g.*, a blow with a **stick** on chest and abdomen may cause injury to large blood vessels, and to lungs, liver, spleen and kidneys.**Accidental Causes. Tip—STICK.****S** Stabs (and Punctured wounds).**T** Tumbles (and Falls from a height).**I** Injuries (to internal organs) caused by fractured ribs and pelvis.**C** Crushes of body.**K** Kicks (and other blows) to chest and abdomen.**TREATMENT OF SNAKE AND RABID ANIMAL BITES.****Tip—COBRAS.**

Certain Snakes and Certain Animals, when infected with Rabies, inject a *Special* (inevitable) poison, which may cause serious (and often immediate) danger to life.

C Constriction—Placed *immediately* between wound and heart by fingers and thumb. This prevents venous blood from carrying poison into body.

Keep up pressure till ligatures prepared and placed in position.

O Obstruct further Spread of poison by causing free bleeding; keep affected part low; bathe freely with warm water.

B Burn freely with fluid caustic (Potash, Carbolic and Nitric Acids) or with red hot wire or fusee, if Caustics not available.

Act thus only if Doctor not available.

Rub in powdered Permanganate of Potash, after Venomous Snake Bite.

R Remove Ligatures and keep wound at **Rest—Restful** position of patient.

A Apply Antiseptic Dressing after a while. (See **Suffragists**).

S Shock—If present, treat. Most marked after bites of venomous snakes and wounds of poisoned weapons. (See pp. 17 and 28.)

GENERAL SCHEME OF TREATMENT OF WOUNDS AND BLEEDING.

ARTERIAL OR VENOUS—DUE TO ACCIDENT OR DISEASE
(*e.g.*, BURST VARICOSE VEIN).

Tip—SUFFRAGISTS.

- | | | |
|----------|------------------|--|
| S | First you | Set <i>patient</i> in Suitable position, Sitting or Supine , with elevation of part, and so regulate bleeding. |
| U | And quickly | Uncover and expose wound fully. |
| F | Then with your | Fingers exert digital pressure: (1) On wound, if small; (2) on vessel supplying part, if large. |
| F | If necessary try | Flexion , and control main Vessels in Folds of knee, elbow. |
| R | Next you | Remove foreign bodies (<i>e.g.</i> , glass, &c.) and Remove constrictions (collars, corsets, garters) and cleanse wound. |
| A | Now you | Apply an Antiseptic dressing (clean paper, &c.). |
| G | Then apply | Good Pad and Bandage , <i>i.e.</i> , accurately and firmly, unless—(1) Risk of injury to subjacent fracture; (2) foreign body suspected in wound. |
| I | Now keep parts | Immobile and at complete rest, lest bleeding restart. |
| S | Lastly you | Support the bleeding part— Sling, Splint, &c. |
| T | Do not forget | Tourniquet and its Indications—(1) If glass embedded in wound; (2) if subjacent bone shattered; (3) if bleeding excessive and otherwise uncontrollable; (4) as temporary and precautionary measure. |
| S | Also treat | Shock , due to effects of injury, bleeding, fright. |

Note.—Application of Tincture of Iodine is much advocated for septic wounds and also for prevention of sepsis.

SPECIAL NOTES.

1. All external bleeding is controllable by pressure. (See Tourniquet.)
2. Pressure most suitable for wounds of Limbs, Neck and parts of Head.
3. Digital pressure fatiguing and therefore ineffective after a time. Arrange for relief, if necessary.
4. Promptness of Action, Accuracy of Pressure (judged by effect on flow of blood), Care during Transport, are essential.
5. Avoid Elastic Bandage (or its substitutes, braces, rubber tubing, &c.) as Tourniquet, *except* for Accidental Amputation, and *when* it is necessary to cut off all circulation.
6. Do not disturb blood-clots, which are Nature's First Aid.
7. Bleeding most troublesome.—Injury to Scalp, Palm of Hand, and Burst Varicose Vein.

CAUSES AND DANGERS OF BURNS AND SCALDS.

CAUSES.

Tip—**FEAR HOT** (boiling) **WATER**.**Burns.**

F Fire. *Dry* heat. Hot water.
E Electricity—rail; Dynamo, &c.
A Acids and alkalies (corrosive).
R Rubbing. Friction. Brush burns.

Scalds.

H Heat: *Moist*. Steam.
O Oil—hot or boiling.
T Tar—hot or boiling.
& Boiling *Water*.

DANGERS are Immediate and Remote.Tip—**SEPSIS**.

- | | |
|---|--------------|
| S Shock —Always present; may be profound and rapidly fatal. | } Immediate. |
| E Exhaustion —Due to Sepsis and Shock and varies with <i>area</i> of burn. | |
| P Poisoning of Blood —(Sepsis) always more or less present. | |
| S Syncope —May be transient, or dangerous, if burn severe. | |
| I Irregularity and Deformity—Sometimes very marked. | } Remote. |
| S Scarring —Unlike Shock, varies with <i>depth</i> of burn. | |

THE TREATMENT OF BURNS AND SCALDS.

Tip—BURNS.

- B Blisters**--Leave alone ; increased risk of Sepsis (blood poisoning).
U Uncovering a Burn is dangerous. Exposure to air leads to increased Shock and risk of Sepsis.

∴ Cover up quickly. NOTE.—Three degrees of Burn ; R. B. C.

- R.** 1. With Reddening of skin—thick paste of flour, chalk.
B. & C. 2. With **Blistering and Charring**—Oil, Vaseline, Lano-line.

Cover with small pieces of lint ; and avoid frequent change of dressing and consequent exposure of wound.

Tepid alkaline bath—soothing *till* dressing prepared.

Carron oil (Lime water and Linseed oil) made useful and antiseptic if Eucalyptus oil (10 %) added. (See Lotions, p. 17.)

Boracic acid—useful, antiseptic ; Picric acid soothing, astringent, antiseptic.

- R Remove Clothing** over injured part—slowly, carefully.

Snip round and leave adherent portions soaking in oily dressings. Whilst removing clothes, instruct bystander to prepare dressings.

- N Neutralize.**—*Boiled Water always a safe and reliable neutralizer.*

1. Acid Burn—with water and alkali (cooking and washing soda, magnesia, &c.)
2. Alkali Burn—with water and acid (lemon juice and vinegar solution.)
3. Tar Burn—with oil (or turpentine), both of which dissolve tar slightly.

Brush away lime before adding water, lest lime become slaked.

- S Shock**—always present, and due to effects of pain, injury, and fright ; marked in children and neck burns ; may be dangerous to life ; varies directly with area of skin involved ; and when profound must be treated first, leaving local injury till later.

SPECIAL NOTES.

1. **Treatment of Shock** is both local and general. (See "**Broad St. Special**," p. 28.) Remove cause as far as possible—Then treat effects—*i.e.*:—

1. Local: Cover burn *when dressed* with cotton wool and bandage. Support part.
2. General: Attend to comfort of patient and part. Warmth—**B**ed, **B**lankets, hot **B**ottles and **B**ricks. Hot drinks—Tea, Coffee, and *Sugar*. Friction to limbs.

2. **Friction of Limbs** very useful, because it promotes warmth and stimulates the restored circulation. (*See Treatment of Asphyxia.*)

3. **Scalds** are serious, because the boiling oil (and tar) adheres to the part and is apt to spread over a large surface area; and if more than one third of the body is affected, death almost always results.

LOTIONS.

Lotions are solutions of drugs which are used to cleanse, soothe, or cool wounds, burns, bruises, &c. They are best prepared with warm sterile (boiled) water and vary in strength, for measuring which see Emergency Measures (p. 37).

1. **Antiseptic**—Boracic (1 in 40), Carbolic (1 in 60), and Picric Acids (1 in 160), Lysol (1 in 200), and Sanitas, which makes a very effective wash for all kinds of wounds and a good disinfectant spray for purifying the air of sick-rooms.
2. **Soothing**—Warm sterile water; Bicarbonate of Soda (1 in 80); Picric Acid (1 in 160). See **Wasps**, p. 18.
3. **Cooling**—Cold water; vinegar (1 in 1); Methylated Spirit (1 in 4).

SOME "LOCAL" ACCIDENTS.

Note.—The following local injuries (Leading Signs: **Pain, Redness, Swelling**) may all be accompanied by constitutional effects and symptoms.

1. **Bruises** are local injuries with effusion of blood (capillary hæmorrhage) beneath skin, but without surface wound. Cold water at outset (with or without Methylated Spirit, 4 oz. to pint), applied on single layer lint (to permit rapid evaporation) may limit extravasation of blood; later, hot fomentations promote absorption. A **Contusion** is a bruise *and* wound.
2. **Burns** are local injuries caused by fire, heat and chemicals.
3. **Boils** are local infections by germs; in early stage, often aborted by covering with adhesive plaster; later, require special treatment.
4. **Bites of Rabid Animals, Snakes, &c.** (see p. 13), are local injuries caused by the teeth, &c. of animals, the wound being infected with special and dangerous (inevitable) poisons.
5. **Stings of Insects, Plants, &c.**, are local injuries caused by the injection of irritant *acrid* fluid, which is closely related to Formic Acid (ants). Symptoms may be serious and dangerous. After extraction of sting they are best treated with *Alkaline Lotions*.

LOTIONS AND CAUSES. Tip—**WASPS**.

Alkaline Lotions.

- W** Washing Soda (strong solution).
A Ammonia (weak solution).
S Soda Bicarbonate (cooking soda).
P Potash (strong solution).
S Sal Volatile and Cooking Soda paste.
& Blue Bag, which contains alkali (soda).

Common Causes.

- W** Wasps and Bees.
A Ants and Gnats.
S Spiders, Scorpions.
P Plants, Nettles.
S Sea Nettles (Jelly Fish).
6. **Frost Bite** is a local anæmia (with loss of sensation), caused by extreme cold. It specially affects *extremes* of age (old and young) and the four *ends* of the body; often first noted by others; very liable to reactionary inflammation and gangrene, if circulation restored suddenly. (For Treatment, see p. 30.)

CAUSES OF INSENSIBILITY.

Tip—PAIN.

Insensibility signifies that the functions of the brain are in abeyance; and that there is an absence of feeling and **pain**: and a **Fit** is a sudden seizure, in which there is complete or partial insensibility, with or without convulsions.

- P Poisons**—1. *From within*—Infantile Fits, Asphyxia, Uræmia.
 2. *From without*—Alcohol, Opium and Narcotics.
A Affections of Brain—Apoplexy, Epilepsy, Hysteria, Exposure to Heat, Sunstroke, &c.
I Injuries of Brain—Concussion, Compression.
N Nervous Affections—Syncope, Shock, Collapse.

Alternative Tip—A. E. I. O. U.

The **Vowel** tip (the authorship of which I do not know and am unable to acknowledge) may be modified and made more complete as follows:—

No. 1. (Usually with Convulsions).

- A.** Apoplexy.
E. Epilepsy.
I. Injuries to Brain.
O. Obstruction of air passages (Asphyxia).
U. Upset of Nervous System—Hysteria, Syncope, Shock, Collapse.

No. 2.

- Alcoholism.
 Extremes of Heat and Cold.
 Infantile Fits.
 Opium and Narcotic poisons.
 Uræmia (Kidney disease with retention of waste products in blood).

N.B.—Group No. 1 are the common causes of **Adult Fits**. **Infantile Fits** are usually due to **Fever, Intestinal, Teeth and Stomach disorders**. Tip—**FITS**.

SCHEME OF EXAMINATION OF INSENSIBILITY.

DRUNK OR DYING.

Tip—**F. P. B.**, *the letters varying with each Section.*

1st **NOTE SURROUNDINGS OF PATIENT**—and get a general impression of the case; note position of body, and look for any indication of poisoning, or other cause of Insensibility.

2nd **NOTE DEGREE OF INSENSIBILITY**—and confirm your general impression by touching the “whites” of the eyes and comparing the pupils.

Complete Insensibility—Compression, Collapse, Epilepsy,
and Apoplexy (usually).

Partial Insensibility—Hysteria.

Complete or Partial } Syncope, Shock, Collapse, Alcoholism.
Insensibility.

3rd **EXAMINE CIRCULATORY SYSTEM**—Is heart acting?

F Note Face.— Tip—**FACE.**

F Folds } These give important indications of circulatory
A Appearance } and brain trouble.

Face anxious. Asphyxia, Hæmorrhage—Int. and Ext.

Face terrified. Strychnine poisoning.

Alteration of folds of one side suggests paralysis.

C Colour of Face.— Tip—**RED, WHITE, OR BLUE.**

Red, flushed. Alcoholism, Apoplexy, Compression.

White, pallid. Shock, Collapse, Hæmorrhage.

Blue, lips livid, &c. Asphyxia.

E Eyes—bloodshot. Asphyxia and Sunstroke. (See B, Section 5.)

The eyes are the windows of the brain, and

If (a) The eyes are sensitive to light and touch,	{	Then there is no injury to, or disease of, the brain.
(b) There is no squint,		
(c) There is no alteration of pupils		

P Note Pulse. Feel pulse at wrist, temples and carotids: if no pulse felt, place hand on heart area of chest and feel for heart beat.

1. Pulse slow, full and bounding. Apoplexy, Compression.
2. Pulse slow, weak; then rapid, feeble. Shock, Concussion, Collapse.
3. Pulse rapid, full. Sunstroke, Fever.

B Note Body-Temperature by placing back of hand on bare skin.

1. Skin colder than usual. Shock, Collapse, Concussion.
2. Skin hotter than usual. Sunstroke, Apoplexy, Compression.

4th **EXAMINE RESPIRATORY SYSTEM.**—Is patient breathing, or is breathing suspended, as in Fits, Shock, Poisoning? If he breathes, then—

F Note Fashion of Breathing—

- (a) Slow, snoring. Apoplexy, Compression, Collapse.
- (b) Slow, shallow, sighing. Shock, Concussion.
- (c) Difficult, yawning (air hunger). Hæmorrhage (Int. and Ext.).

P Note Pressure on (or Obstruction of) Air Passages, Asphyxia. Face blue, swollen; eyes bloodshot; lips and extremities livid.

Always examine Mouth.

1. Blood, mucus. Fits, Strychnine.
2. Food, Foreign Body. Choking.
3. Water, froth, mucus. Drowning.

Always examine Tongue and Lips.

1. Stained, as in Corrosive Poisoning.
2. Bitten, as in Fits (especially Epilepsy, Strychnine).
3. Swollen and furred, as in Alcoholism.

B Note Breath and its Odour—which may give useful hint in Alcoholism, Carbolic, Opium, and Phosphorus Poisoning.

5th **EXAMINE NERVOUS SYSTEM.**—Is there injury to, or disease of, the Brain? (See next page.)

6th **EXAMINE HEAD AND BODY.**—Is there injury to Head, Spine, Pelvis, &c.? (See next page.)

SCHEME OF EXAMINATION OF INSENSIBILITY.—

Continued.

5th. EXAMINE NERVOUS SYSTEM.—Is there injury to, or disease of the Brain ?

F Look for Fits (viz., convulsions). (See **A. E. I. O. U.**, p. 19).

P Look for Paralysis. Examine and compare the face and the limbs of each side, and, whilst doing this, look for fractures and dislocations; and remember that if the folds of one side of face are lost, or if the limbs of one side are more limp and helpless than their fellows, paralysis is suggested—as in Apoplexy.

B Look for Brain mischief.—Examine Face and Eyes (see above); and remember *Any alteration of Pupils is serious* and suggests Brain mischief.

1. One pupil or both may be dilated and fixed. Apoplexy.

2. One pupil may be dilated and fixed. Compression.

3. Both pupils may be minutely contracted. Opium poisoning.

6th EXAMINE HEAD AND BODY.—Is there injury to Head, Spine, Pelvis, &c. ?

F Look for Fracture of Skull.—Vault or Base. (See **Nose**, p. 6.)

P Look for Punctured (and other) Wounds of Scalp.

B Look for Body Injuries.—Chest, Abdomen, Spine, Pelvis.

SPECIAL NOTES.

1. The Cause of Insensibility may be obscure and remote: *e.g.*, Sun-stroke may develop in the cool evening; in poisoning, &c.
2. There may be *two* causes of Insensibility present together: *e.g.*, Epilepsy and Fractured Base, Alcoholism and Apoplexy, &c.
3. The Insensibility may recur after an apparent recovery: *e.g.*, Epilepsy, Opium Poisoning, Compression after Injury, &c.
4. The Pulse and Respiration vary in rate with age, position of body, excitement, exertion, disease, &c.; but their normal relation in health is 4 : 1. In children, the average rates are 92 : 23; in youth 80 : 20; and in adult age 72 : 18.

EPILEPSY AND HYSTERIA.

(Contrast No. 1.)

Tip—EPILEPTIC.

		Epileptic Fit	Hysterical Fit
	<i>Leading Signs</i>	<i>Sudden and Complete Insensibility and Convulsive Movements (usually)</i>	<i>Partial Insensibility and Emotional Acts and Movements (all ways).</i>
E	Emotion ..	Absent	Usually precedes : grief, excitement, &c.
P	Place ..	Fit occurs at any time and place	Fit only occurs when others present.
I	Insensibility	Sudden and complete ..	Partial and gradual.
L	Limbs ..	Movements regular, then irregular	Movements throughout irregular.
E	Eyes ..	Fixed; "whites" of eyes insensitive and eyelids relaxed	Roll about; "whites" sensitive. Eyelids resist attempts to open.
P	Preventives ..	None; fit runs its course..	Firm treatment controls or stops.
T	Tongue ..	Frequently bitten	Never bitten.
I	Injuries ..	Very liable to self-injury..	More likely to injure bystanders
C	Causes ..	<i>Disease of Brain</i> characterized by fits, which have 3 definite stages, Insensibility, Convulsions and Sleep	<i>Disturbance of Nervous System</i> , rendered unstable by Anæmia, Ill-health, Alcoholism, &c.

Note.—The common causes of death in an Epileptic Fit are Suffocation during sleep and Falling into fire. (For Treatment, see p. 29.)

The Signs of Infantile Fits closely resemble those of Epileptic, and for Causes see **Fits**, p. 19.

APOPLEXY AND ALCOHOLISM.

(Contrast No. 2.)

Tip—APOPLECTIC.

(See p. 42.)

		Apoplectic Fit	Alcoholic Fit
	<i>Leading Signs</i>	Insensibility— <i>usually Complete</i> . Age. Paralysis of face and limbs	Insensibility — <i>Partial or Complete</i> . Collapse and Odour of Alcohol.
A	Age	Usually mid-aged ; elderly.	Any age, often young adult.
P	Pupils ..	Fixed and often unequal..	Dilated, equal, react to light.
O	Odour of Breath	Alcohol-- absent, or faint, due to few drops taken for preliminary faintness.	Strong odour in breath and clothes.
P	Pulse ..	Slow, full and strong ..	Feeble ; may be absent.
L	Limbs ..	Of <i>one</i> side more limp and helpless, viz., paralysed.	<i>All</i> equally limp and helpless.
E	Eyes (and Face)	Fixed and insensitive. Face flushed, and loss of folds of <i>one</i> side. (See Face , p. 20.)	Sensitive, bloodshot. Face pale and folds normal.
C	Character of Breathing	Slow, deep, stertorous. ..	Shallow, rapid.
T	Temperature	Raised. Skin hotter. ..	Lowered ; Skin colder than usual due to Collapse.
I	Insensibility	Usually complete	Partial or Complete.
C	Causes ..	Rupture of vessel in brain, with signs of Compression.	Alcohol. Lack of food and clothing.

Note.—The signs of Paralysis of Face and Limbs are often not pronounced *at first* ; compare Severe Sunstroke (p. 25) and Opium Poisoning (p. 33).

Alcoholism predisposes to Apoplexy and Heart failure (Collapse).

HEAT-APOPLEXY, SUNSTROKE, &c.

(Contrast No. 3.)

Heat Apoplexy is a congestion of the brain, which is associated with an unstable Nervous System, and follows exposure to Heat, natural or artificial. Signs may be divided into (1) Early (or mild), and (2) Late (or severe), when the condition may resemble true Apoplexy, with which it is here contrasted. (See p. 29.)

(1) EARLY (OR MILD).

(2) LATE (AND SEVERE).

		Tip— APOPLECTIC.	
(1)	G astric Disturbance, Nausea and Vomiting.	A	A ge Any age.
		P	P upils Both pupils small, equal; then dilated.
(2)	G iddiness and Fainting.	O	O dour of Breath Alcohol—if present—probably marked.
(3)	G asping Respiration.	P	P ulse Quick and bounding.
		L	L imbs All relaxed.
(4)	G ait staggering.	E	E yes Bloodshot. Face very flushed.
	(Note the four G 's, and see Prussic Acid Poisoning, p. 35).	C	C haracter of Breathing Slow, deep, stertorous.
		T	T emperature Very high. Thirst marked. Skin dry and burning.
	<i>Leading Signs—</i>	I	I nsensibility Partial; quickly complete.
	Exposure to Heat or Sun, Nervous Symptoms (Shock and Collapse).	C	C auses Heat and unstable Nervous System, due to over-exertion, bad ventilation, Alcoholism.

Apoplexy signifies that a patient has been "*struck down*," and that there is a loss of sensation and motion. Usually it is due to the rupture of a blood-vessel in the brain, and therefore gives the signs of Compression of the Brain, and of paralysis of one side of face and body.

THE CAUSES OF ASPHYXIA.

Any cause which interferes with breathing tends to **poison** the blood and stop the heart, making the patient *asphyxiated* (pulseless). In Drowning, death may ensue after submersion for two minutes and may be due to Asphyxia, or to Syncope and Shock, following injury to head and abdomen: but recovery has been effected after immersion for fifteen minutes and a total period of Insensibility lasting two hours.

Tip—**POISON.**

P Pressure—

1. On Chest—sand, debris, crowd .. Smothering.
2. On Air Passages Strangulation.

O Obstruction of Air Passages—

1. General (from without) { Smothering.
Strangulation.
2. Local (from within). Food, foreign body, fluid, &c. { Choking.
Drowning.

I Inhalation of Poisonous and Irrespirable Gases.

- Sewer, coal and water gases
Chloroform, charcoal and coke fumes } Suffocation.

S Swelling of Throat (see p. 31) Choking.

O Opium and Narcotic Poisons

N Nervous System—Affections—

- Collapse, Electric and Lightning Shock } These paralyse the
Chief Centres of the
Nervous System,
and so asphyxiate.

THE TREATMENT OF ASPHYXIA.

Tip—**REST.**

1. **Remove cause** or **Remove from cause.** Then treat effects, viz. :
2. **Do artificial respiration**, and by keeping up the supply of fresh air to lungs purify the blood, stimulate the heart, and restart the function of breathing. When breathing established *then*
3. **Apply General Treatment for Insensibility.**—“**Broad St. Special,**” p. 28.

During recovery from Asphyxia **rest** is essential. Therefore, the **Special Indications** are **R. E. S. T.** Watch for **Relapse**; Treat the **Exhaustion** due to struggling, injuries, &c.; Treat the **Shock** due to fright, cold, and exposure; and, above all, keep up the **Body Temperature** (pp. 17, 28).

ARTIFICIAL RESPIRATION— METHODS, &c.

(1) Schaefer. Compression of Lumbar Region.

1. Essentials .. Patient prone ; no pad ; kneel at side.
2. Criticism .. Simple ; most effectual ; no assistant ; no risk of injury to ribs and liver ; prone position keeps tongue forward and favours escape of water, mucus, &c.
3. Indications .. Drowning ; injury to arms.

(2) Silvester. Leverage of Arms *and* Compression of Ribs.

1. Essentials .. Patient supine ; pad beneath shoulders ; kneel behind head.
2. Criticism .. Difficult and fatiguing ; requires assistant for tongue and for relief when fatigued ; supine position acts reversely to above.
3. Indications .. Coal gas, chloroform poisoning and later stage drowning.

(3) Laborde. Traction of Tongue.

1. Essentials .. Patient supine or side ; jaw depressed ; kneel side.
2. Criticism .. Method indirect ; most effectual electric shock.
3. Indications .. Electric shock ; suffocated children ; injury to arms *and* ribs.

(4) Howard. Compression of Ribs (arms raised).

1. Essentials .. Patient supine ; pad middle of back ; kneel across hips.
2. Criticism .. Easy. Disadvantages as Silvester, with which it may be combined ; more vigorous and actually dangerous to ribs and liver, if swollen as in drowning.
3. Indication .. Injury to arms.

(5) Marshall Hall. Compression of Ribs *and* Rolling to Right Side.

1. Essentials .. Patient prone ; pad beneath chest ; kneel left side.
2. Criticism .. Most laborious ; least effectual ; requires two assistants ; prone position gives advantage, but rolling of patient is waste of time and energy.
3. Indication .. Drowning.

*In all—save (1) and (5) clear mouth and keep tongue under control,
In all, alternate movements—about 15 per minute,*

GENERAL SCHEME OF TREATMENT OF INSENSIBILITY.

Also applicable to severe Hæmorrhage (Internal, External or Combined), Collapse, and Severe Shock—being modified as laid down in “Special.”

Tip—BROAD ST. SPECIAL.

- B** make **Breathing** easy by placing patient on **Back** (or side), head to one side, chin forward. If face is pale, head low; if flushed, head slightly raised. Raise foot of bed and perform artificial respiration if necessary.
- R** **Remove** cause (or **Remove from** cause) *first*: then treat effects.
Arrest Hæmorrhage.
Attend to Injuries, Burns, Wounds, Fractures, &c.
Examine throat—food, false teeth, foreign body.
- O** **Open** all doors and windows; and **Open up** clothes—to relieve the pressure on Chest, Abdomen.
- A** **Air**—fresh air freely. Fan vigorously, keep back crowd.
- D** **Doctor**—Send quickly; written message with details; and **Don't** leave patient, except with responsible person.
- S** **Shock**—Treat. *When conscious* give water; warmth; encourage sleep, except with opium poisoning; and stimulate (except in Hæmorrhage) with hot drinks, tea, coffee, and sugar, smelling salts to nose. (See pp. 17, 36.)
- T** **Temperature**. Keep up **Body Temperature**, which is particularly liable to fall below normal after accidents.

Warmth—**Bed**, **Blankets**, hot **Bottles**, **Bricks**.

Warm, well-ventilated room. Friction to limbs.

- SPECIAL.**
- S** If **Starved**—feed cautiously at first.
 - P** If **Pulseless** (Hæmorrhage)—avoid stimulants, which would re-start the bleeding.
 - E** If **Epileptic** (and **Fits**)—protect from self injury.
 - C** If **Collapsed**—treat with head low, limbs bandaged, foot of bed raised.
 - I** If **Insensible**—give no food, fluid or solid.
 - A** If **Asphyxiated** (or breathing fails) — **Artificial Respiration** after removal of cause.
 - L** If **Limb** or **Limbs** broken—prevent movements till splinted.

SPECIAL NOTES.

1. The diagnosis of the Cause is useful for correct Treatment ; but it is not essential.
2. Watch carefully for possible relapse— *e.g.*, Epilepsy, Compression.
3. Hæmorrhage may re-start after return of consciousness.
4. Drowning is Asphyxia + the effects of Cold, Shock and Exhaustion.

TREATMENT OF HEAT-APOPLEXY.

The Mortality after Sunstroke is 50 per cent., and of those who recover many are permanently invalided.

Tip—Sunstroke is DREADED.

- D Doctor**—send at once ; written details.
- R Remove** to cool, shady spot. **Restful, Recumbent.** Head, trunk raised.
- E Expose**—by stripping to waist.
- A Air**—fresh air freely. Fan vigorously. Bad ventilation a cause.
- D Douche** head, neck and spine with cold water till conscious. Icebag. Do not prolong treatment *too* long, because of
- E Exhaustion**—marked. **Bed, Blankets, Bricks, &c.** *Expect relapse*, and, if necessary, repeat treatment and perform Artificial Respiration.
- D Demulcent Drink.** Cold water when conscious. Avoid stimulants.

TREATMENT OF EPILEPTIC FITS.

1. Apply General Treatment for Insensibility. **Broad St. Special.**
2. **Special Rules of Treatment**—(A) **Protect**, (B) **Provide**.

(A) **Protect from Self Injury.**—At outset, catch patient as he falls : slip piece of wood between teeth, to protect tongue. Remove any source of danger, and, if necessary, remove from any source of danger, *e.g.*, furniture, fireplace. Support head and prevent choking. Watch for relapse ; there may be series of fits.

(B) **Provide what Relief** you can—loosen clothes, provide plenty of fresh air, encourage sleep later, and avoid stimulants.

TREATMENT OF ELECTRIC SHOCK.

I. Immediate. Protect and Remove from Contact. (*Remove Cause.*)

1st *Protect (insulate) yourself.* Stand on (and cover hands with) suitable non-conductor. India rubber is best, failing which *dry* glass, wood, woollen coat, silk, &c. *Avoid metals and moisture.*

2nd *Protect patient* by pulling (or kicking) from contact; or by removing live wire.

II. Later. Provide for Treatment of Effects, viz., Shock and Burns.

If insensible, see "**Broad St. Special**," p. 28; and for **Special**,

1. Rouse by flicking face and chest with wet towel.
2. Start Artificial Respiration (Laborde) if still unconscious.
3. Dress burns.

TREATMENT OF HANGING, &c.

The **SALAD** Tip for Scalded Throat (if slightly altered and modified) will serve for Treatment of Hanging and Strangulation.

S Set in **Suitable** position.—Immediately **Support** body.

A Air—fresh air freely.

L Loosen (or cut) cord and **Loosen** clothes, constrictions, corsets, &c.

A Apply Artificial respiration, and possibly hot **Applications** to neck.

D Douche head and neck with cold water.

TREATMENT OF FROST BITE, AND COMMON SITES. (See p. 18.)

Treatment. Tip—**FROST.**

Sites. Tip—**ENDS.**

F Fingers—Friction with —and vaseline.

E Ear.

R Remove cause by rubbing with snow, and *cold* water.

N Nose.

O Obstruction of circulation thereby slowly removed. *Then, treat*

D's Digits.

Ear and Nose,

S Shock—may be marked

Fingers and Toes.

T Temperature—Keep up Body Temperature but keep Temperature of Room low (60° F.).

TREATMENT AND CAUSES OF SWELLING OF THROAT.

Swelling of the tissues of the Throat may arise from—

Tip—**SIP.**

- S Scalding**—Due to swallowing (or to inhaling steam of) boiling water.
- I Inflammation**—Septic Sore Throat, &c.
- P Poisoning**—An after-effect of Corrosive Poisoning.

Tip—**For Scalded Throat give SALAD Oil.**

- S Set** patient in chair before fire, wrapped in blankets, covered warmly, to combat shock.
- A Artificial Respiration**—if breathing fails—may be necessary.
- L Loosen Clothes** on chest (collar, corsets) and make breathing easy.
- A Apply** hot fomentations, poultices, &c., to front of neck from chin to sternum. Change frequently, as heat evaporates.
- D Demulcent Drink**—Give dessertspoon of **SALAD** oil (or any animal or vegetable oil) ; sips of cold water. Suck ice.

POISONS.

Poisons are *noxious* substances, which, applied externally, or introduced into the body, tend, *in themselves*, to injure health or to destroy life.

Poisoning may be accidental, suicidal or homicidal, and the evidence rests on Special and General Symptoms (see p. 33).

The **Special Symptoms** which suggest poisoning are—

- | | | |
|------------|---|---|
| Note 5 S's | { | (1) Sudden onset of illness during health. |
| | | (2) Suspicious surroundings—glass, bottle, smell of poison. |
| | | (3) Several persons affected, especially after taking food or drink. |
| | | (4) Signs of depression—previously—of patient. |
| | | (5) Suicidal tendency of patient. |

LIST OF POISONS.

(1) CORROSIVES (OR STAINING) (a) ACIDS, AND (b) ALKALIES.

Tip—The Corrosives include **N. O. C. H. S.—A. S.**
(noxious) Potash.

(a) Acids and their Stains.

N Nitric (aqua fortis)	.. Yellow.
O Oxalic (salts of lemon)	.. White.
C Carbolic (breath smells, urine green black)	.. ,,
H Hydrochloric (spirits of salt)	 ,,
S Sulphuric (oil of vitriol)	Black.

(b) Alkalies and Stains.

	Caustic.
A Ammonia	
S Soda	
P Potash	

All give dirty-white stains.

(2) NON-CORROSIVES (OR NON-STAINING).

Tip—Learn Non-Corrosives **P. A. T.**, like your **A. B. C.**,
and remember the **P. S.**

(a) Irritants (Metallic).

- P Phosphorus** (match heads and rat pastes, often with Arsenic)
—Breath smells garlic, vomit luminous in dark.
- A Arsenic** (rat pastes, fly and wall papers, pigments, &c.).
- T Tartar Emetic** (Antimony)—Bronzing trade ;
- & Mercury** (Corrosive Sublimate)—Antiseptic lotions, &c.

(b) Narcotics (Sleep Causing).

- A Alcohol**—Rum, brandy, whisky ; rectified, proof and methylated spirits.
- B Belladonna** (Deadly Nightshade) and Laburnum seeds.
- C Chloroform**—**A. B. C. show stage of excitement before sleep produced.**
- D Derivatives of Opium** (soothing syrups, cordials, &c., especially for children), Laudanum, Paregoric, Poppies, &c.
- & Prussic Acid** (oil of almonds)—Breath smells of bitter almonds.

(c) Irrito-Narcotics--combining both symptoms.

- P Ptomaines**—Poisoned fish, meat and fungi (especially mushrooms and mussels).
- S Strychnine** (vermin killers), (Nux Vomica, St. Ignatius bean).

GENERAL SYMPTOMS OF POISONS.

(1) CORROSIVES AND IRRITANT POISONS.

The Irritants are less severe in their immediate *local* and *general* effects; their symptoms are similar, but slower in onset; and there is a metallic taste in the mouth. Otherwise, symptoms and effects are similar, and *at first* these are mainly gastro-intestinal.

1. Immediate burning pain mouth, throat and stomach.
 2. Followed by vomiting, purging, thirst, and cramps in calves.
 3. Primary Shock—followed by Collapse, due to exhaustion.
- Most marked with Carbolic and Oxalic Acids.

(2) NARCOTIC POISONS.

These have 3 stages and *from the outset* the Nervous Symptoms predominate.

- 1st Headache, sleepy, drowsy. Pulse rapid, breathing rapid.
- 2nd More sleepy, but can be roused. Pulse slow, breathing slow and gasping.
- 3rd Complete Insensibility and Collapse—complete muscular relaxation; pulse weak, pupils fixed, breathing slow, irregular and stertorous.

(3) THE IRRITO-NARCOTICS.

These combine both groups of symptoms; marked gastro-intestinal symptoms being followed by Coma, Stertor and Collapse.

COMMON CAUSES OF POISONING.

The More Common Causes of Poisoning are (in order of frequency)—
Opium (Laudanum), Alcohol, Prussic Acid (and Cyanide of Potassium) and Oxalic Acid.

TREATMENT OF POISONING.

Tip—Act quickly or your patient will be DEAD.
And remember your special instructions STAYUS.

- D Doctor** : send immediately : written message : name of poison.
- E Emetic**—give (1) if no stains round mouth, and (2) when patient is conscious. The longer the poison remains in stomach, the greater its effects.
1. Tickle throat with finger or feather (sometimes more effective after draught of tepid soapy water).
 2. Give one tablespoonful mustard, two tablespoonfuls salt in tumbler tepid water.
 3. Give Ipecacuanha wine, one teaspoonful to child, one tablespoonful to adult. Repeat if necessary.
- (With Opium group emetics tend to fail, and for stimulant choose Ammonia.)
- A Antidote**—*Strong tea and coffee always safe, useful, and reliable.*
 Acid poison—wash mouth and sip lime water, chalk or soda solutions.
 For Oxalic acid—choose lime (chalk and plaster), because the salts of soda, ammonia and potash combine to form a soluble poison.
 For Carbolic acid—choose Epsom Salts dissolved ($\frac{1}{2}$ oz. to 1 pint) in milk.
 Alkali Poison—wash mouth and sip vinegar, lemon, or citric acid solutions.
- D Demulcent drinks.** Milk most useful, soothes and by clotting in stomach catches up poison; combine with **raw eggs, cream and flour**, which act similarly. **Oils (animal and vegetable)** protect uninjured and soothe injured parts of mouth, throat, and stomach; but with Phosphorus avoid oils and fats, which would form soluble poison. Olive oil (5 oz.) in milk or water (1 pint) makes a useful demulcent drink. The whites of raw eggs are specially indicated for Mercury poisoning.

Special Instructions. Tip—STAYUS.

- S Stupor**—if present, keep awake; walk about; slap face, chest, soles.
- T Throat**—if swollen and breathing obstructed. Treat, and see p. 31.
- A Asphyxia**—if present, and if breathing tends to fail—artificial respiration. Select method most suitable, p. 26.
- Y Vomit**—save all vomit, food, and any substance suspected of poison.
- U Utensils**—save all vessels, bottles, &c. Do **not** clean.
- S Shock**—treat shock and collapse, if present.

NOTES ON SPECIAL POISONS.

Opium and Phosphorus—a rapid and fatal collapse may follow an apparent recovery. Pupils pin-point with opium.

Belladonna (Deadly Nightshade)—**Note the FIVE D's.** Berries picked and eaten by children.

- | | |
|--------------------------------------|---|
| 1. Dryness of skin, mouth and throat | } Has been mistaken for
Acute Alcoholism
(see p. 24). |
| 2. Difficulty in swallowing | |
| 3. Dilated pupils | |
| 4. Drunken gait | |
| 5. Delirium | |

Prussic Acid may cause death in two minutes, but recovery is certain if life maintained for half an hour. **Note the FIVE G's.**

- | | |
|-------------------------|---|
| 1. Giddiness | } See Early Sunstroke, p. 25, and note
that both require cold Douche
and Stimulant treatment. |
| 2. Gasping respiration | |
| 3. Gait staggering | |
| 4. Glistening eyes, and | |
| 5. Great collapse | |

Strychnine—attacks of muscular spasm (arched back, asphyxia), alternating with muscular relaxation. Death from Asphyxia or Collapse.

Ptomaines. After emetic acts, give Castor oil.

AFFECTIONS OF NERVOUS SYSTEM.

1. **SYNCOPE** (Fainting) is a **temporary** depression (may be fatal) of the Nervous System, associated with a disturbance of the heart's action and a *sudden* disturbance of the brain circulation. For Signs, see p. 42; for Treatment, see p. 28.

Causes. Tip—**Syncope is a DEEP sleep.**

N. B.—First and Last, disturbance of Heart is the cause of Syncope.

D Disease of Heart.

E Exhaustion — Physical. **Hunger, Heatstroke, Hæmorrhage, Fatigue.**

E Emotions—Mental. **Fright, Suspense, Anticipation of injury.**

P Pressure on Heart—

1. From without (on chest). **Tight lacing, Crowd.**

2. From within—Distension of stomach, flatulence.

2. **SHOCK**—is a **profound** depression (may be momentary) of the Nervous System; usually gradual in onset; may precede and terminate in Collapse; very liable to relapse; marked fall of Body-temperature. For treatment, see pp. 17 and 28.

Causes. Tip—**SHOCK.**

S Scalds and Burns—severe, especially head and neck; and children.

H Hæmorrhage—Int., Ext. or Combined—and Heart weakness.

O Oxalic Acid—viz., Corrosive and Irritant poisons.

C Crushes of Body—and other extensive lacerations, wounds, &c.

K Kicks—and other injuries to the abdomen.

3. **COLLAPSE**—is an **extreme** depression of the Nervous System; often secondary to Shock, but different in that the Insensibility and Muscular Relaxation are more marked; most liable to *sudden* relapse.

Causes. Tip—**SHOCK.**

Causes and Tip are same as for Shock, **except** that **Opium** (and the Narcotic poisons) replace Oxalic Acid, and **Alcohol** must be added as a frequent cause of Collapse.

EMERGENCY APPARATUS.

- (1) **EMERGENCY MEASURES.** — Domestic measures are only approximate and vary so much that they should not be used for measuring medicines, especially for children.

Spoon Measure.

60 drops	= 1 teaspoonful.
2 teaspoonfuls	= 1 dessertspoonful.
4 „	= 1 tablespoonful.
2 tablespoonfuls	= 1 oz.

Cup Measure.

Wineglassful	= 2 oz.
Teacupful	= 5 oz. ($\frac{1}{4}$ pt.)
Breakfastcupful	= 7 oz. ($\frac{1}{3}$ pt.)
Tumblerful	= 10 oz. ($\frac{1}{2}$ pt.)

Therefore, one teaspoonful of any drug in $\frac{1}{4}$ pt. of water is **1 in 40**; in $\frac{1}{2}$ pt. is **1 in 80**; in 1 pt. is **1 in 160**, &c., &c.

- (2) **EMERGENCY WEIGHTS.**—Coins are useful in emergency as approximate weights, thus: A crown piece weighs 1 oz., a half-crown $\frac{1}{2}$ oz., a florin and a sixpence *together* weigh $\frac{1}{2}$ oz., and three pennies *together* 1 oz.

- (3) **EMERGENCY ANTISEPTICS.**—Alcohol, Turpentine, are Domestic remedies.

- (4) **EMERGENCY STRETCHERS.—COAT. CARPET. COALSACK.**

1. **Coat and Poles**—Stout poles passed through sleeves, which are turned inside out; coat buttoned; good seat; rest back against bearer. More coats if necessary for longer stretcher. Bearers walk with broken step.
2. **Coalsack and Poles.**—Clean coal sack; holes bottom corners; poles.
3. **Carpet and Poles.**—Roll stout poles in sides of carpet, sacking or blanket. Two bearers each side; control carpet; walk sideways, broken step.
4. **Coalsack and Hurdle.**—Layer of straw, hay; clean sacks on top.

- (5) **EMERGENCY SPLINTS AND BANDAGES.** Note **S** and **B**.

Splints may be improvised from *anything long enough and strong enough to control joints adjacent to fracture.*

S. Sticks, Straw bundles, Stacks of newspapers, &c.

B. Broom and Brush handles, Bayonets, Billiard cues, &c.

Bandages may be improvised from *anything long enough and strong enough to control splints and dressings.*

S. Straps, Strips of cloth, calico and flannel, &c.

B. Belts, Braces, &c.

THE USES OF SPLINTS AND BANDAGES.

Splints are rigid supports, which must control the joints immediately adjacent to a fracture, and are used for—

1. **Comfort**—to increase the natural fixity of a part.
2. **Control**—to prevent an unnatural mobility of a part.

Bandages are strips of cloth and are used for—

1. **Comfort**—(1) to keep injured parts at rest.
(2) to support injured parts—Slings, &c.
2. **Control**—(1) to control and prevent hæmorrhage (pressure).
(2) to control and fix a fracture.
(3) to control and fix the splints.
(4) to control dressings and cover wounds.

THE ESMARCH BANDAGE. Its Uses and Essentials.

The Esmarch Bandage is commonly employed in First Aid, because it is **Useful** for all purposes, **Simple** to extemporize and to remove, **Easy** to apply, and **Satisfactory** in its results; but its real value is only appreciated after much practice, and when skill in its application is combined with—

1. **Correctness**—All knots must be **Reef**, placed externally, over splints and avoid pressure.
2. **Effectiveness**—As judged by the results—Comfort and Control.
3. **Neatness**—Point secured, edges turned up, ends tucked in.

N.B.—A **Reef knot** has two strands *above* one loop, and two strands *below* the other loop.

THE ST. JOHN SLING. Its Special Indications.

1. Fracture of Clavicle
 2. Fracture of Scapula
 3. Bleeding from Palm of Hand—Flexion of elbow controls main vessels, keeps hand elevated, and relaxes the strong fascia over palmar vessels.
- } avoids pressure on injured shoulder.

N.B.—This sling is applicable for any serious injury in shoulder region, and when, the upper limb being injured, it is inadvisable to move the forearm, which is held at right angles to the arm.

TWELVE GOLDEN RULES.

1. **AVOID MEDDLESOME FIRST AID** ; and in each emergency exercise Knowledge, Common Sense and Skill.
2. **FIRST AID DUTIES END WHERE THE DOCTOR'S BEGIN.**
3. **STIMULANTS REQUIRE SPECIAL SIGNS.**
4. **WHEN IN DOUBT TREAT AS MORE SERIOUS INJURY.**
5. **FIRST REMOVE THE CAUSE OR REMOVE FROM THE CAUSE.**
6. **TO FEED AN UNCONSCIOUS MAN IS TO KILL HIM.**
7. **TREAT THE MOST SERIOUS INJURY FIRST—**

Usually hæmorrhage, but not necessarily, *e.g.*, a serious but removable obstruction to breathing.

8. **FLAMES RISE UP ; TREAT WITH FLAMES UPPERMOST.**
9. **BEFORE ANY MOVEMENT FIX FRACTURE FIRST.**
10. **FIRST CONTROL THE FRACTURE, THEN CONTROL THE SPLINTS.**
11. **WITH MOUTH STAINS WITHHOLD EMETICS.**
12. **USE COLD APPLICATIONS FIRST AFTER INJURY, AND HOT FOMENTATIONS LATER ; EXCEPT** when pain and inflammation indicate otherwise.

SUMMARY OF TIPS.

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ADDENDUM.

The Tip—**APOPLECTIC**—is useful for any question on Signs and Symptoms; *e.g.*, **Signs of Syncope (and Internal Hæmorrhage)** (see p. 12).

- A** Age—any Age.
- P** Pupils—equal, dilated; react to light.
- O** Odour of Breath—Always smell breath.
- P** Pulse—weak, rapid, irregular; then absent.
- L** Limbs—all relaxed.
- E** Eyes (and face)—Face pale, lips white. Pupils dilated.
- C** Character of Breathing—feeble, rapid, irregular; then gasping.
- T** Temperature—lowered. Skin cold, clammy; cold sweats.
- I** Insensibility—partial (with giddiness); then complete.
- C** Causes—Syncope, see p. 36; Hæmorrhage—see p. 13.

EMERGENCY CHEST.

An ideal Home Medicine Chest (of which some excellent patterns in various shapes and sizes are obtainable from W. Toogood, Ltd., 77, Southwark St.) should be fitted with lock and key, and consist of two shelves (each divided into two compartments) and a bottom drawer. In the top Right division you keep the **Solids**: Boracic Acid (powder and ointment), Bicarbonate of Soda, Vaseline, and Lanoline. In the top Left, you place the **Internal Medicines**—all carefully corked, labelled, and showing dosage: Sal Volatile, Brandy, Castor and Salad Oil, Glycerine and Ipecacuanha Wine.

In the bottom Right division you keep your **Apparatus**: A kidney basin, medicine glass, graduated glass measures, pins, safety pins, scissors. In the bottom Left, you keep your **External Applications** and Poisons: Carron and Eucalyptus Oils, Witchhazel, Lysol, Collodion (New Skin), and Sanitas, which makes a useful antiseptic lotion for wounds and a disinfectant spray for purifying the air of sick-rooms.

In the Drawer below you keep your **Dressings**:—Lint (ordinary and boracic), Cotton wool, Bandages (Triangular and assorted roller), ordinary and rubber adhesive plaster on spoons.

N.B.—The Left compartments are less accessible than the Right, and therefore safer for the poisons.

COMMON DISLOCATIONS.

Tip—**STIFF.**

Leading Signs—

Evidence of local injury (Pain, Numbness, &c.).

Deformity and Fixity of joint.

S Shoulder—most common dislocation : usually after fall on hand.

Position : Arm tilted from side of body and carried by patient.

Deformity : Shoulder flattened, head of humerus displaced.

T Thumb—usually due to direct violence to hand.

Position : Thumb displaced backwards and fixed.

Deformity : Swelling at back of joint due to base of phalanx.

I Jaw—usually both joints displaced, and due to excessive muscular action (gaping, laughing). If one joint only affected, signs much less marked.

Position : Mouth widely opened and fixed.

Deformity : Depression of jaw : if one joint, chin turned towards sound side.

F Fingers—usually due to direct violence.

Position : Distal phalanges displaced backwards.

Deformity : Swelling at back of joint, due to base of phalanx.

F Forearm (Elbow)—most common in children, after fall on hand.

Position (Elbow) : Forearm semiflexed and fixed.

Deformity : Marked swelling at back of joint, due to displaced bones of forearm.

FIRST AID EMERGENCY CASES AND CABINETS.



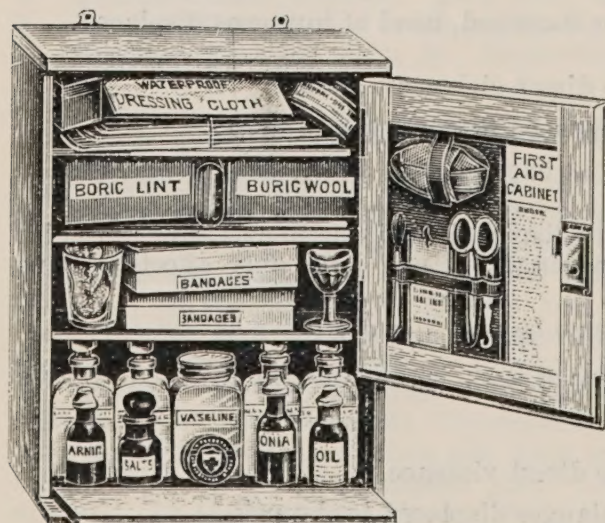
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LECTURE NOTES.

N.B.—Add your Notes in ink (not pencil).

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